

No. 664,326.

Patented Dec. 18, 1900.

W. F. KINTZING.
WIRE SPLICING MACHINE.

(Application filed Apr. 3, 1900.)

(No Model.)

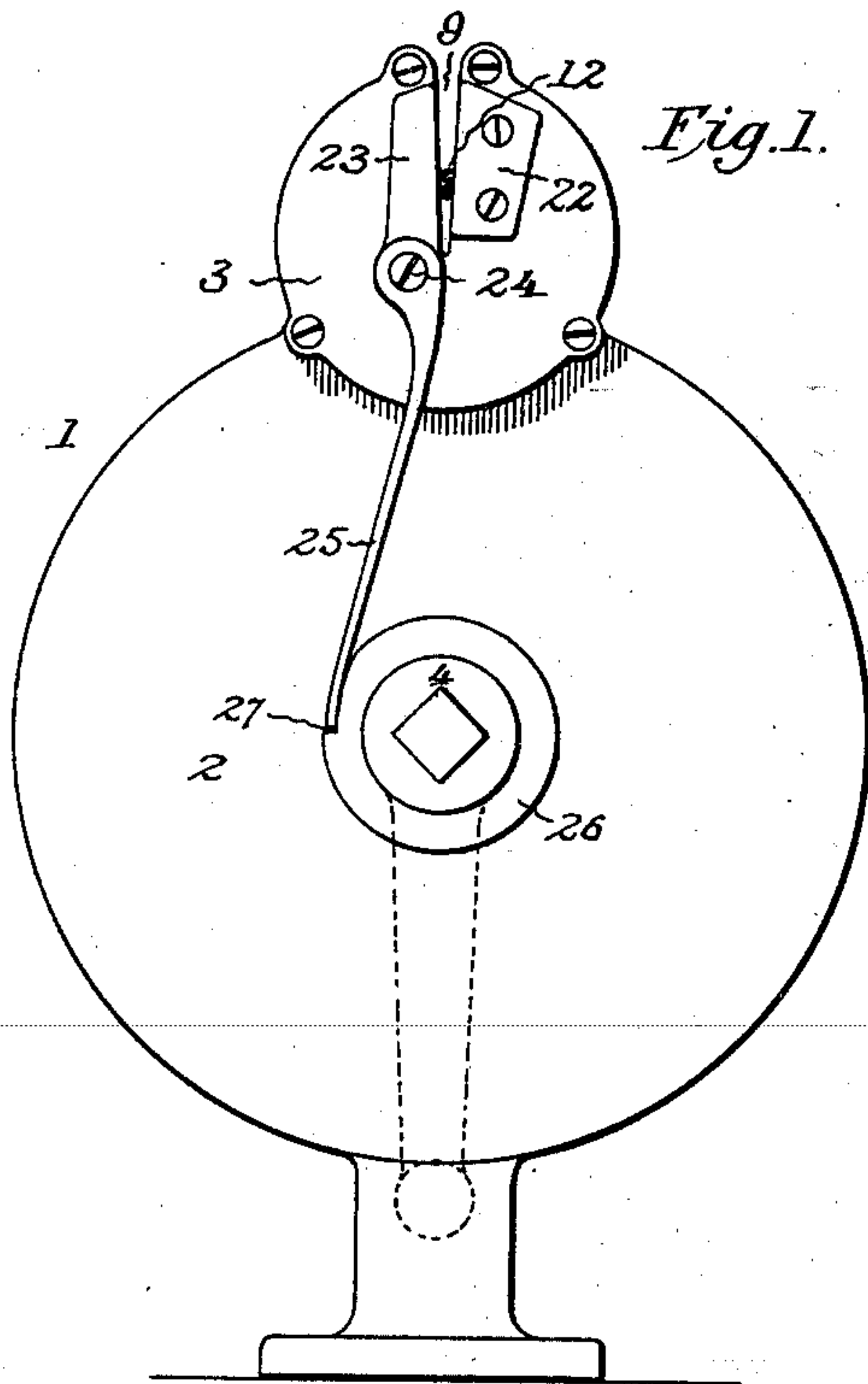


Fig. 1.

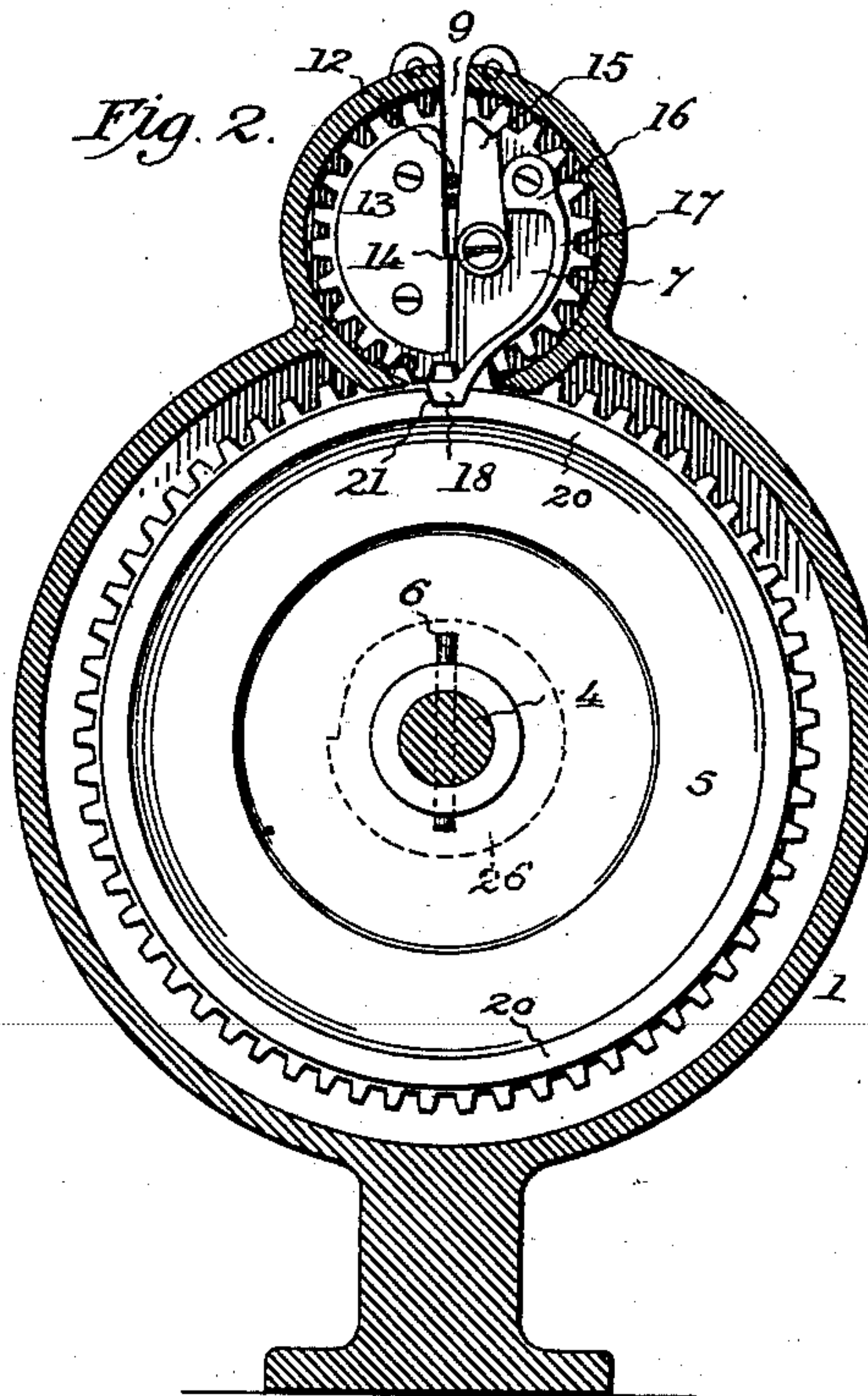


Fig. 2.

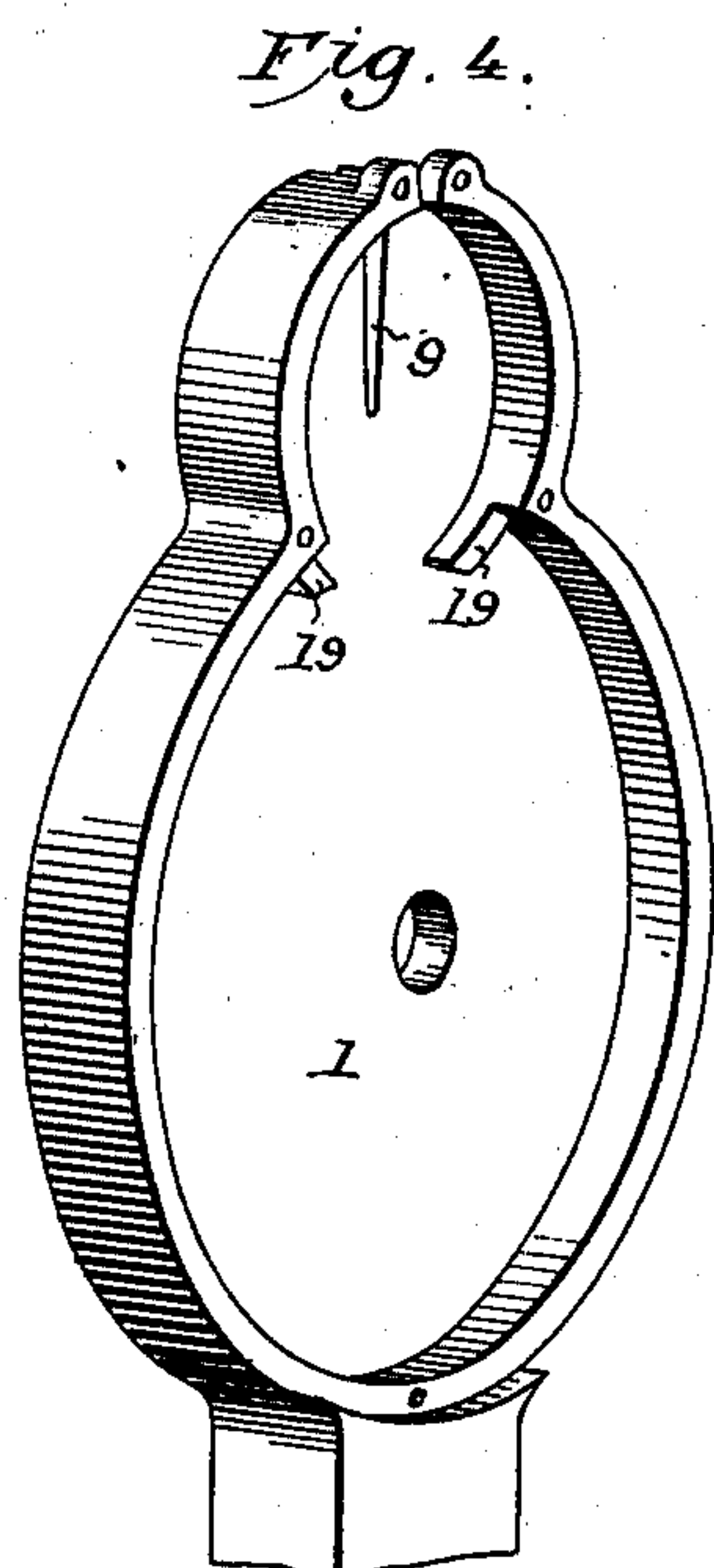


Fig. 4.

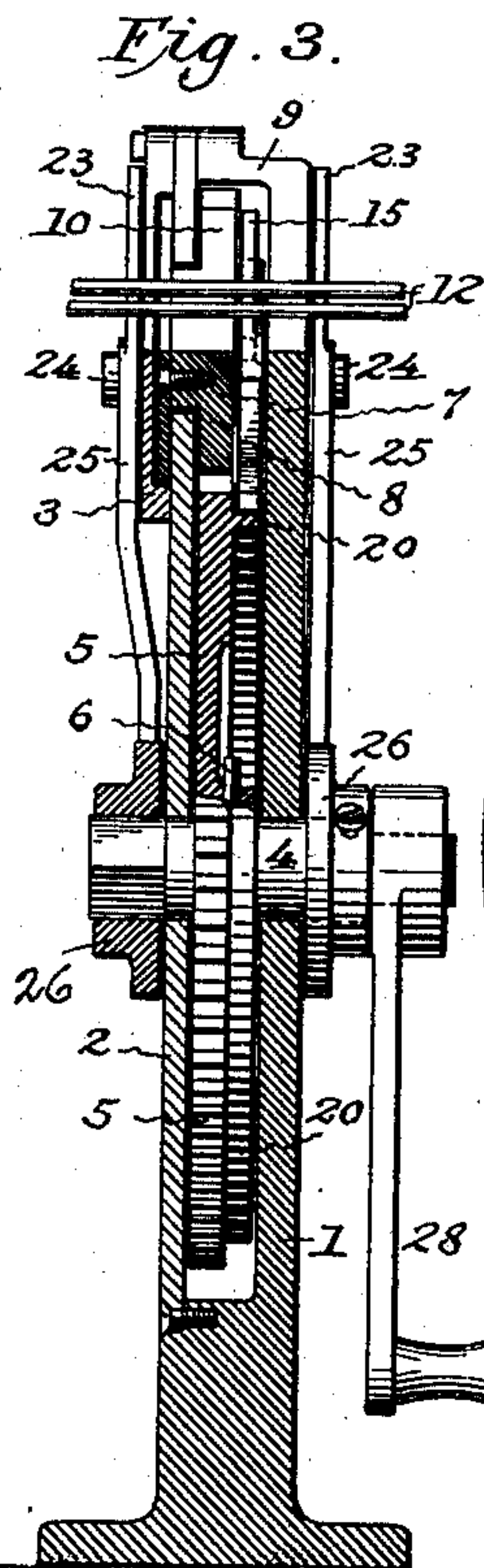


Fig. 3.

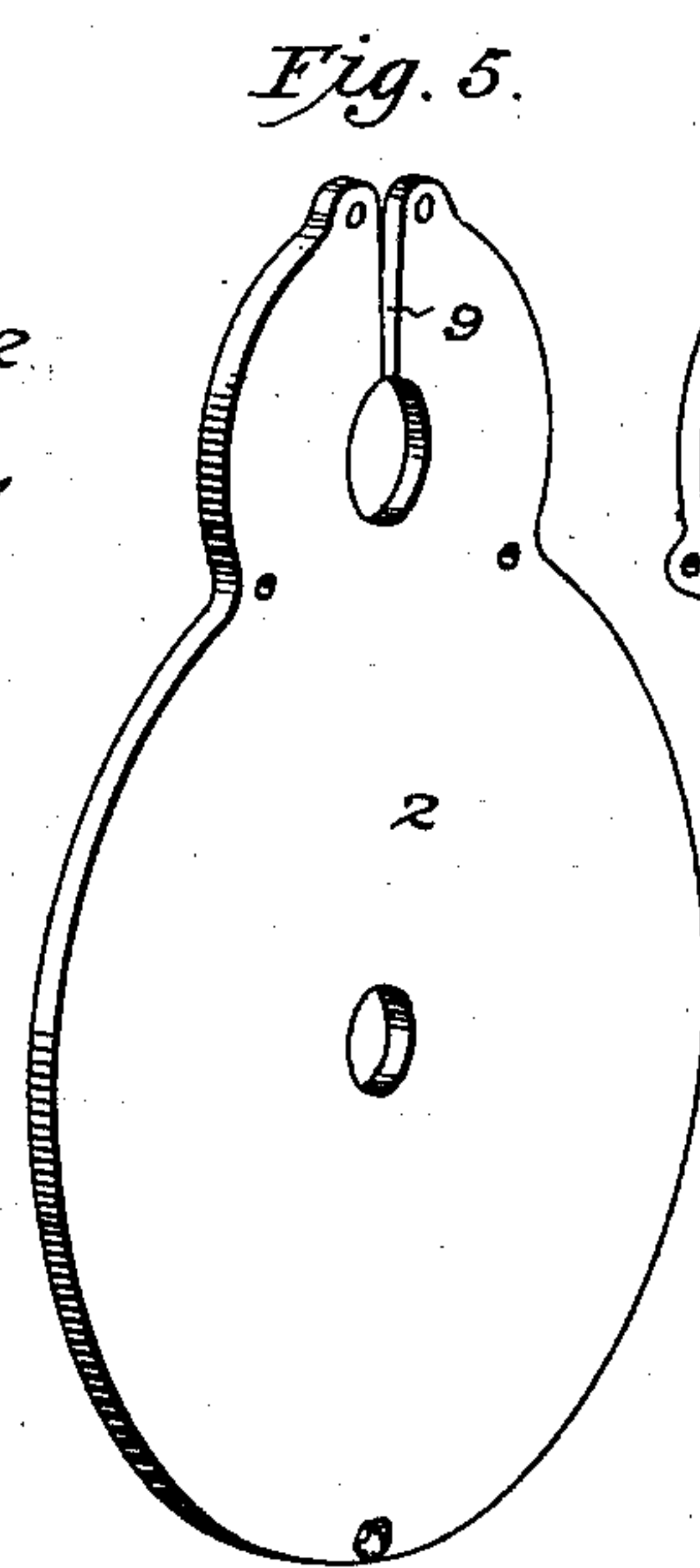


Fig. 5.

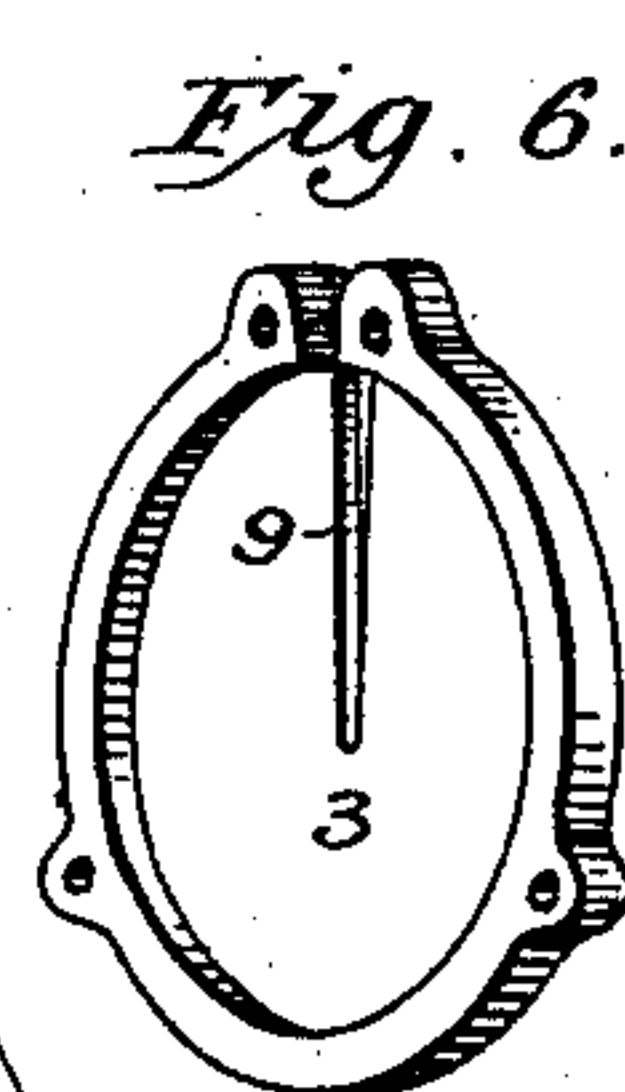


Fig. 6.

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UNITED STATES PATENT OFFICE.

WILLIAM F. KINTZING, OF GLEN ROCK, PENNSYLVANIA, ASSIGNOR OF
ONE-HALF TO ARTHUR S. NORRISH, OF SAME PLACE.

WIRE-SPLICING MACHINE.

SPECIFICATION forming part of Letters Patent No. 664,326, dated December 18, 1900.

Application filed April 3, 1900. Serial No. 11,338. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. KINTZING, a citizen of the United States, residing at Glen Rock, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Wire-Splicing Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to wire-splicing machines; and it has for its object to provide a machine for that purpose composed of few parts, which can be easily assembled, which will be strong and durable in use, and which will be efficient for the purposes for which designed.

To the accomplishment of the foregoing and such other objects as may hereinafter appear, the invention consists in the construction and also in the combination of parts hereinafter particularly described and then sought to be clearly defined by the claims, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a side view of the machine. Fig. 2 is a vertical section through the same. Fig. 3 is a vertical cross-section with parts in full lines. Fig. 4 is a perspective of the main frame. Fig. 5 is a perspective of the plate which forms the removable side to the frame, and Fig. 6 is a perspective of the removable side to the hood portion of the frame.

In the drawings the numeral 1 designates the frame, which in the present instance is illustrated as in the form of a case or shell having a reduced portion at the top for the twister-wheel, the open side of the shell being closed by a plate 2, which has a reduced upper portion conforming substantially to the shape of the upper portion of the shell and adapted to form the support for the twister-wheel.

The numeral 3 designates a cap or cover applied at the upper reduced portion of the shell, so as to cover and shield the outside face of the twister-wheel. This cap and the

plate 2 are held together and to the shell by threaded bolts or screws, as illustrated, and the cap, plate, and shell are formed with corresponding slots 9 for the wire strands which are to be spliced together.

The frame is provided with an axle or shaft 4, upon which is mounted inside of the frame a gear-wheel 5, the same being secured to the shaft by a pin 6 or otherwise. Within the upper part of the frame is mounted a smaller gear-wheel 7, which meshes with the larger gear-wheel, said smaller wheel being formed with a peripheral groove 8, designed to receive the plate 2, so as to support or journal the wheel in such manner that it will be free to rotate, said wheel being provided with a slot 10, extending inwardly from its periphery and registering with the corresponding slots 9, formed in the upper part of the shell, the plate, and cover, as illustrated in the drawings, so as to permit the two strands of wire which are to be spliced to be passed through said slots and be engaged by the twisting or splicing mechanism, the two strands of wire being designated by the numeral 12 in the drawings. To one face of the small gear-wheel 7 there is secured a plate 13, constituting a fixed jaw to one side of the slot in the wheel, and to the same face of the wheel, at the opposite side of the slot, is movably connected by a pivot-pin 14 or otherwise a movable jaw 15, adjacent to which there is pivoted to the gear-wheel a cam 16, so positioned that when moved in one direction it will press the movable jaw toward the fixed jaw, and thus clasp the wire strands in the slot of the wheel, said cam being provided with an extension or arm 17, having a head 18, which in the rotation of the small gear-wheel will contact with the inner face of that portion of the frame which incloses the wheel, so that when it so contacts the cam will be moved so as to press the movable jaw toward the fixed jaw for the purpose of clamping the wire strands. The free end of this extension or arm carrying the head 18 in the position in which the cam stands when the jaw is not in its gripping position enters an enlargement or opening 19, so that the cam will not exert a binding action upon the movable jaw. It is preferred to make the extension or arm 17

of spring metal, so that when in the rotation of the small gear-wheel the free end of the arm comes opposite to said opening 19 and the latter is not obstructed the free end may snap into said opening, and thus release the cam from its binding action upon the movable jaw; but said arm may otherwise be placed under a spring influence to effect that action, or it may be made to depend upon the action of gravity to enter said opening in releasing its grip upon the movable jaw. It is preferred to have the wire strands gripped by the jaws until the large gear-wheel 5 has made one complete revolution and then to have the jaws release their grip upon the wire strands, and for that purpose the large gear-wheel 5 has formed upon one face an annular ring or flange 20, which is formed with a recess or opening 21, which in the revolution of the wheel 5 is brought into register with the opening 19, so that when the two openings are in register the free end of the arm 17, carrying the head 18, may drop sufficiently to release the cam from the jaw 15. At other times in the rotation of the wheel 5 the periphery of the ring or flange 20 will serve to close or obstruct the opening 19, so that the arm 17 cannot drop far enough for the cam to release its grip on the movable jaw, the free end or head of the arm at such times resting upon the periphery of the ring or flange 20 and being thus held in such position that the cam will exert its binding action upon the movable jaw, so as to grip the strands of wire. The wire strands are also gripped on opposite sides of the frame next to the slots 9, formed in the top of the frame between fixed and movable jaws, the fixed jaws being formed by plates 22, secured to the outside of the frame at one side of the slots 9, and the movable jaws (designated by the numeral 23) being movably secured to the opposite sides of the frame—for instance, by pivots 24. Each of these jaws is formed with an extension or arm 25, which is preferably of spring metal. Two collars 26 are secured to the shaft 4, so as to turn therewith, and the periphery of each of these collars is made with a cam-surface, preferably by reducing the peripheral face of the collars, as shown at 27. Under this construction when the shaft 4 is turned by means of the crank 28 the collars are caused to exert pressure against the free ends of the arms 25, so as to press the same outward, and thus throw the movable jaws at their upper ends toward the fixed jaws 22, and thus cause the wire strands to be gripped between the fixed and movable jaws while lying in the slots 9, whereby the strands are held in a fixed position on opposite sides of the frame while the small gear-wheel is rotated, as before described, for the purpose of twisting or splicing the ends of the strands together. When the collars have made a complete revolution, the arms 25 will snap from the highest part of the cam-surface of the collars down onto the reduced portion thereof, as illustrated in

the drawings, and thus quickly release the grip of the movable jaws 23 on the strands. The arms 25 by being made of spring metal are under a spring tension when pressed by the cam-collars, and while it is preferred for that purpose to make the arms of spring metal, still if they should otherwise be brought under a spring influence or should be allowed to drop merely by gravity from the highest part to the lowest part of the cam-surface the broad feature of this element of my invention would still exist. I prefer, however, to make these arms of spring metal, so that when the jaws have been moved sufficiently far to grip the wire strands the continued increasing pressure of the cam-surfaces against the arms will cause the wires to be firmly gripped by the yielding pressure thus imparted.

I have illustrated and described what I consider to be the best construction and arrangement of the several parts; but changes can be made in the details and certain essential features of my invention still be retained.

Having described my invention and set forth its merits, what I claim is—

1. In a wire-twisting machine, the combination with the frame and the rotatable twisting-wheel mounted therein, the frame and the wheel being correspondingly slotted, of the fixed and the movable jaw secured to the twisting-wheel at opposite sides of the slot, the cam secured to the twisting-wheel in position to actuate the movable jaw and having a part adapted to bear against a part of the frame to actuate the cam to move the jaw for the purpose of gripping the wire strands to be twisted, and means for operating the twisting-wheel, substantially as described.

2. In a wire-twisting machine, the combination of the slotted twisting-wheel, the fixed and the movable jaw secured thereto, the cam carried by the wheel and having an arm arranged to contact with a part of the frame to actuate the movable jaw, and a driving-wheel for actuating the twisting-wheel, said driving-wheel having a recess or opening adapted to receive the free end of the arm to the cam for the purpose of releasing the cam from the movable jaw, substantially as described.

3. In a wire-twisting machine, the combination with the slotted twisting-wheel provided with the gripping-jaws, the cam carried by the wheel and having an arm arranged to contact with a part of the frame to actuate one of the gripping-jaws, and a driving-wheel for actuating the twisting-wheel, said driving-wheel being formed with a ring or flange adapted to contact with the arm of the cam to retain the cam in operative position against one of the jaws to grip the wire strands and having a recess or opening adapted to receive the free end of the arm to the cam for the purpose of releasing the cam from the movable jaw, substantially as described.

4. In a wire-twisting machine, the combination with the frame and the rotatable toothed twisting-wheel mounted therein, of the fixed

and the movable jaw secured to the twisting-wheel, the toothed driving-wheel engaging with the twisting-wheel and provided with a ring or flange having a recess or opening, 5 and the cam carried by the twisting-wheel and having an arm adapted to contact with a part of the frame in the rotation of the twisting-wheel to actuate the gripping-jaw and at some time in its rotation to enter the opening 10 in the ring or flange for the purpose of releasing the gripping-jaw, substantially as described.

5. In a wire-twisting machine, the combination with the slotted twisting-wheel provided 15 with the gripping-jaws, of the cam provided with a spring-influenced arm carried by the twisting-wheel and adapted in the rotation of the wheel to contact with a part so as to move the cam into position to actuate the gripping-jaw, 20 substantially as described.

6. In a wire-twisting machine, the combination with the frame and the twisting-wheel mounted therein, the frame and wheel being correspondingly slotted, of the fixed and the 25 movable gripping-jaws located on opposite sides of the slot in the frame, the movable jaws having extended arms, and rotatable cams arranged to bear against the extended arms to actuate the gripping-jaws, substantially as described. 30

7. In a wire-twisting machine, the combina-

tion with the frame and the twisting-wheel mounted therein, the frame and wheel being correspondingly slotted, of the driving-wheel 35 mounted upon a shaft and engaging the twisting-wheel, the fixed and the movable gripping-jaws located on opposite sides of the slot in the frame, the movable jaws having extended arms, and collars attached to the shaft 40 of the driving-wheel and formed with cam-faces to engage the extended arms of the gripping-jaws, substantially as described.

8. In a wire-twisting machine, the combination with the frame and the twisting-wheel 45 mounted therein, the frame and the wheel being correspondingly slotted, of the driving-wheel mounted upon a shaft and engaging the twisting-wheel, collars mounted upon the driving-shaft and having a cam-surface formed with a shoulder, and the fixed and the movable 50 gripping-jaws located on opposite sides of the slot in the frame, the movable jaws having spring-influenced arms bearing upon the cam-surfaces of the collars, substantially as described. 55

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM F. KINTZING.

Witnesses:

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C. B. SEITZ.